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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,141	12/05/2001	Alexander Beeck	033275-316	3862

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EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,141

Applicant(s)

BEECK ET AL.

Examiner

Christopher Verdier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-5 and 8-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-5 and 8-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 16, 2006 has been entered.

Applicant's Remarks dated March 16, 2006 have been carefully considered. The specification has been amended to provide antecedent basis for the claimed subject matter as required in the Office action of November 16, 2005. The claims have been amended to overcome the rejections under 35 USC 112, first and second paragraphs set forth in the Office action of November 16, 2005. Correction of these matters is noted with appreciation.

Applicant's argument that Krause 5,931,638 does not disclose the subject matter of new claim 16, because Krause does not disclose the second passage arranged to extend in the first flow direction (page 13, paragraph two of Applicant's Remarks dated March 16, 2006) is persuasive. However, independent claim 16, for example, is anticipated by Liotta 5,902,093 (of record) and is unpatentable under 35 USC 103(a) over Abdel-Messeh 5,052,889 (newly cited) in view of Glezer 5,603,606 (of record).

Applicant's argument that amended independent claim 8 defines over Krause '638 is not persuasive. Although Applicant's argument that the rib F of Krause does not include a common

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surface that partially defines both the first section B and the second passage 74 as recited in amended claim 8 is correct, Krause still discloses a different common surface that partially defines both the first section B and the second passage 74, as set forth later below. However, amended independent claim 8, for example, is also anticipated by Abdel-Messeh 5,052,889. Applicant's argument that amended independent claim 11 defines over Krause '638 because Krause does not disclose that the coolant passage and second passage are configured to establish a common direction of flow of the cooling medium at the curved section and into the second passage is agreed with. However, amended independent claim 11, for example, is anticipated by Liotta 5,902,093 and Abdel-Messeh 5,052,889.

Applicant's arguments concerning the rejections under 35 USC 103(a) have been considered, but are moot in view of the newly applied references.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 11, last three lines, which recite that the coolant passage and the second passage are configured to establish a common direction of flow of the cooling medium at the curved section and into the second passage, has no antecedent basis in the specification.

Claim Objections

Claims 4-5 and 19-21 are objected to because of the following informalities: Appropriate correction is required.

In claim 4, last line, "a" should be changed to -- the --.

In claim 5, last line, "a" should be changed to -- the --.

In claim 19, line 2, "a" should be changed to -- the --.

In claim 20, line 2, "a" should be changed to -- the --.

In claim 21, line 3, "a" should be changed to -- the --.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-15, and 17-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 8, last line, "a wall" is inaccurate in that it suggests that "a wall" is an additional wall, when in fact this is the same wall recited in claim 8, line 7; "a wall" in claim 8, last line, should be changed to -- the wall --, in order to correct this. See also paragraph 15 of the specification. In claim 11, line 7, "the second passage" is unclear if this is meant to refer to the second section in claim 11, line 3; it appears that in claim 11, line 7, "the second passage" should be changed to -- a second passage --, in order to correct this.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

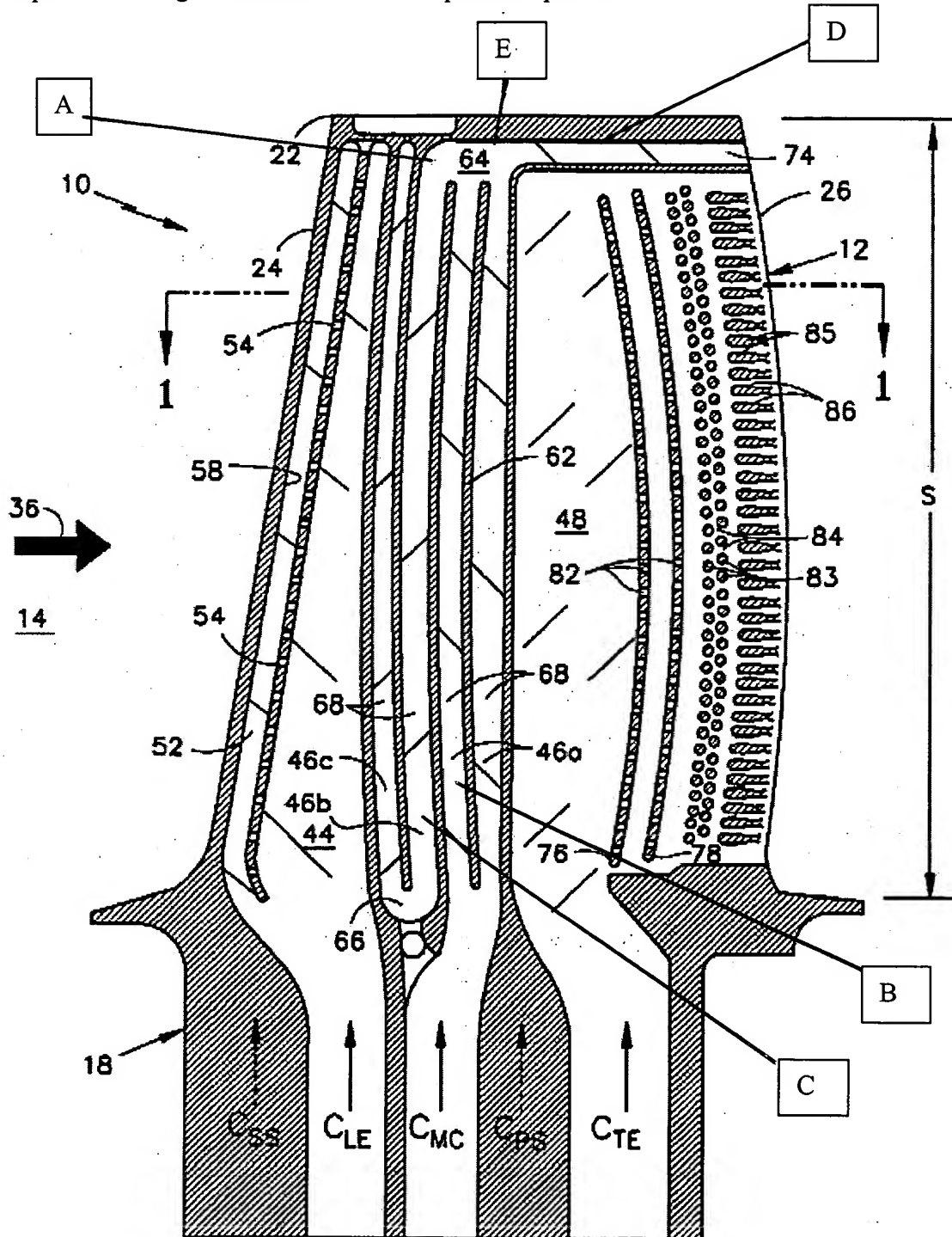
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

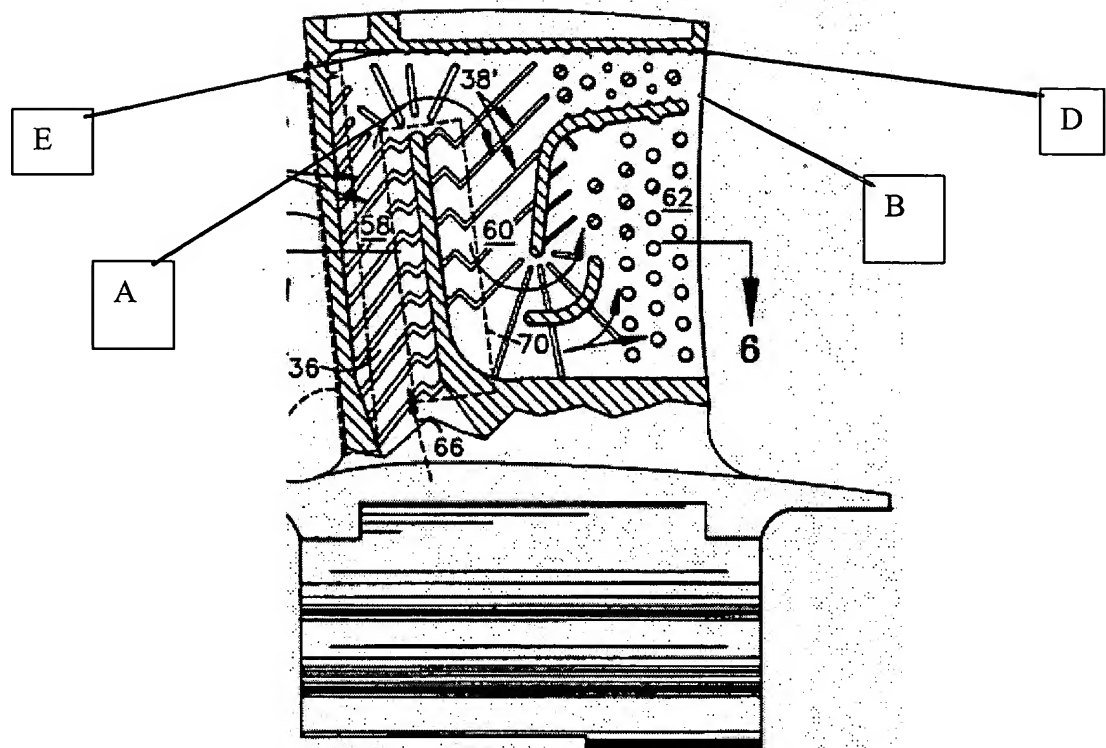
Claims 8, 10, and 19, as far as they are definite and understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Krause 5,931,638. Please refer to the annotated figure below. Krause discloses a component 10 of a fluid flow machine, comprising a coolant passage comprising a curved flow section A, a first section B through which a cooling medium flows toward the curved flow section, and a second section C adjacent the first section through which the cooling medium flows away from the curved flow section, and a second passage 74 comprising an unnumbered inspection aperture, the inspection aperture including a top wall D flush with a wall E of the coolant passage, with the second passage branching off the coolant passage at the curved flow section and being arranged as a tangent to the curved flow section, wherein both of the first section of the coolant passage and the second passage are partially defined by a common surface E of the wall. The inspection aperture is arranged and dimensioned to enable introduction of a borescope through the inspection aperture and the second passage. The inspection aperture has its longitudinal axis essentially parallel to an axis 38 of the fluid flow machine. The recitation of the inspection aperture being arranged and dimensioned to enable introduction of a borescope through the inspection aperture and the second passage does not define over Krause, because these limitations are a function of the size of the borescope, and the size of the borescope would determine whether or not it would be able

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to be introduced into the inspection aperture. A miniaturized borescope having a tiny diameter would be capable of being introduced into the inspection aperture.



Claims 8, 17, and 19, as far as they are definite and understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Abdel-Messeh 5,052,889 (figure 5). Please refer to the annotated figure below. Abdel-Messeh discloses a component 56 of a fluid flow machine, comprising a coolant passage comprising a curved flow section A, a first section 58 through which a cooling medium flows toward the curved flow section, and a second section 60 adjacent the first section through which the cooling medium flows away from the curved flow section, and a second passage B comprising an unnumbered inspection aperture, the inspection aperture including a top wall D flush with a wall E of the coolant passage, with the second passage branching off the coolant passage at the curved flow section and being arranged as a tangent to the curved flow section, wherein both of the first section of the coolant passage and the second passage are partially defined by a common surface E of the wall. The coolant passage is configured to further establish flow of the cooling medium in series from the second section 60 to cooling apertures (near 62) at an edge of the component at which the cooling medium leaves the component. The inspection aperture has its longitudinal axis essentially parallel to an axis of the fluid flow machine.



Claims 11, 14-15, 18, and 20, as far as they are definite and understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Abdel-Messeh 5,052,889 (figure 5). Please see the annotated figure above. Note the component of a fluid flow machine, comprising a coolant passage comprising at least one curved section A, a first section 58 and a second section 60, the coolant passage being configured to establish flow of the cooling medium in series from the first section to the curved section and from the curved section to the second section, a second passage B comprising an unnumbered inspection aperture, with the second passage branching off the coolant passage at the curved flow section and being arranged as a tangent to the curved flow

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section, with the coolant passage and the second passage being configured to establish a common direction of flow of the cooling medium at the curved section and into the second passage. The coolant passage and the second passage are arranged such that particles entrained in the cooling medium pass through the first section, through the second passage and are discharged through the inspection aperture, while the cooling medium which is relatively free of particles flows through the second section. The second section is adjacent the first section. The coolant passage is configured to further establish flow of the cooling medium in series from the second section to cooling apertures near 62 at an edge of the component at which the cooling medium leaves the component. The inspection aperture has its longitudinal axis essentially parallel to an axis of the fluid flow machine.

Claims 3, 5, 11-16, 18, and 21 (as far as claims 11-15 and 21 are definite and understood), are rejected under 35 U.S.C. 102(b) as being anticipated by Liotta 5,902,093. Note the component 10 of a fluid flow machine, comprising a coolant passage comprising at least one curved section 40f, a first section 40e and a second section 40g, the coolant passage being configured to establish flow of the cooling medium in series from the first section to the curved section and from the curved section to the second section, a second passage 44a comprising an unnumbered inspection aperture, with the second passage branching off the coolant passage at the curved flow section and being arranged as a tangent to the curved flow section, with the coolant passage and the second passage being configured to establish a common direction of flow of the cooling medium at the curved section and into the second passage. The inspection aperture is arranged and dimensioned to enable introduction of a borescope through the

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inspection aperture and the second passage. The first section and the second section of the coolant passage are straight. The coolant passage and the second passage are arranged such that particles entrained in the cooling medium pass through the first section, through the second passage and are discharged through the inspection aperture, while the cooling medium which is relatively free of particles flows through the second section. The second section is adjacent the first section. The coolant passage is configured to further establish flow of the cooling medium in series from the second section 40g to cooling apertures near 44b at an edge of the component at which the cooling medium leaves the component. The inspection aperture has its longitudinal axis essentially perpendicular to an axis of the fluid flow machine. The coolant passage comprises at least one curved flow section 40f configured to curve in a first flow direction to establish coolant medium flow in the first flow direction, and a second passage 44a comprising an unnumbered inspection aperture arranged and dimensioned to enable the introduction of a borescope through the inspection aperture and the second passage, with the second passage branching off the coolant passage at the curved flow section and being arranged to extend in the first flow direction along a flow path which is tangential to the curved flow section. The component is a rotating blade for a turbine, the inspection aperture is arranged in the neighborhood of a tip 34 of the blade, and the inspection aperture is arranged at the blade tip and has its longitudinal axis essentially perpendicular to an axis of the fluid flow machine. The recitation of the inspection aperture being arranged and dimensioned to enable introduction of a borescope through the inspection aperture and the second passage does not define over Liotta, because these limitations are a function of the size of the borescope, and the size of the borescope would determine whether or not it would be able to be introduced into the inspection

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aperture. A miniaturized borescope having a tiny diameter would be capable of being introduced into the inspection aperture.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abdel-Messeh 5,052,889 in view of Glezer 5,603,606. Please see the annotated figure above. Abdel-Messeh (figure 5) discloses a component of a fluid flow machine substantially as claimed, including a coolant passage comprising at least one curved flow section A configured to curve in a first flow direction to establish coolant medium flow in the first flow direction, and a second

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passage B comprising an unnumbered inspection aperture, with the second passage branching off the coolant passage at the curved flow section and being arranged to extend in the first flow direction along a flow path which is tangential to the curved flow section. The component is a rotating blade for a turbine, the inspection aperture is arranged in the neighborhood of a tip of the blade, and the inspection aperture is arranged at the blade tip and has its longitudinal axis essentially parallel to an axis of the fluid flow machine.

However, Abdel-Messeh does not disclose that the second passage B is arranged and dimensioned to enable the introduction of a borescope through the inspection aperture and the second passage. Rather, the second passage has obstructions inside.

Glezer shows a cooled turbine blade 114 having tip passage 170 and an inspection aperture 178, with the tip passage being free of any flow obstructions, for the purpose of providing a smooth flow of cooling fluid along the tip and out of the blade at the tip. The tip passage is arranged and dimensioned to enable the introduction of a borescope through the inspection aperture and the second passage, since these are a function of the size of the borescope, and the size of the borescope would determine whether or not it would be able to be introduced into the inspection aperture. A miniaturized borescope having a tiny diameter would be capable of being introduced into the inspection aperture.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the second passage B of Abdel-Messeh such that it is

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unobstructed and thus that it is arranged and dimensioned to enable the introduction of a borescope through the inspection aperture and the second passage, as taught by Glezer.

Claim 9, as far as it is definite and understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Krause 5,931,638 in view of Sidenstick 3,628,885. Krause discloses a component of a fluid flow machine substantially as claimed as set forth above, but does not disclose that the first section B and the second section C of the coolant passage are straight. Rather, the first section and the second section of the coolant passage are curved.

Sidenstick shows a cooled turbine blade having coolant passages 58 which are straight, for the purpose of providing a direct path for cooling fluid to flow along the turbine blade.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the component of Krause such that the first section B and the second section C of the coolant passage are straight, as taught by Sidenstick, for the purpose of providing a direct path for cooling fluid to flow along the turbine blade.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
April 5, 2006



Christopher Verdier
Primary Examiner
Art Unit 3745